CLAIMS

WHAT IS CLAIMED IS:

1. A tire failure detector, comprising:

a receiver mounted in a housing adapted for being attached to a portion of a motor vehicle for generating a signal representative of a thermal characteristic of a portion of a tire sensed by the receiver;

a cover disposed at a first end of the housing protecting the receiver from debris;

a processor for detecting an abnormal signal connected by a carrier to the receiver for communicating the signal therefrom; and

a display operated by the processor for presenting at least an image representative of the detected abnormal signal;

whereby an observer, detecting the display of an abnormal signal, attends to the condition causing the abnormal signal.

2. The tire failure detector as recited in claim wherein the housing defines an elongate barrel open at a distal end thereof, the cover disposed remote therefrom for imaging through the barrel.

3. The tire failure detector as recited in claim 2, wherein the housing mounts to a portion of a wheel well of the motor vehicle.

4. The tire failure detector as recited in claim 1, further comprising:

a supply of a pressurized fluid;

a nozzle mounted relative to the housing for spraying a stream of the pressurized fluid therein;

a tube connecting the supply of the pressurized fluid to the nozzle;

whereby the nozzle communicates the pressurized fluid for cleaning debris from the housing.

5. The tire failure detector as recited in claim 3, wherein the housing defines an outlet closed by a one-way valve for discharging debris and sprayed fluid from the housing.

6. The tire failure detector as recited in claim 1, wherein the receiver comprises an optical imaging device.

7. The tire failure detector as recited in claim 1, wherein the receiver comprises an infrared imaging device.

8. The tire failure detector as recited in claim 1, wherein the receiver comprises a thermal sensing device.

9. The tire failure detector as recited in claim 1, further comprising a second receiver and a third receiver mounted to the motor vehicle on facing opposing sides for generating signals representative of a thermal characteristic of a respective side wall portion of the tire.

10. The tire failure detector as recited in claim 1, wherein the portion of the motor vehicle comprises a shroud for being spaced-apart from the tire.

11. The tire failure detector as recited in claim 10, wherein the shroud is mounted to a biasing device for maintaining a predetermined gap between the housing and the tire subject of observation by the receiver.

12. The tire failure detector as recited in claim 1, further comprising:

a tire mounted to a wheel of the motor vehicle for being observed by the receiver;

a plurality of thermal sensors distributed in spaced-apart relation in the tire for changing in response to temperature changes in the tire;

whereby the receiver detects the changing thermal sensors for communicating a signal representative thereof to the processor.

13. The tire failure detector as recited in claim 12, wherein the thermal sensors include an adhesive surface for attaching the thermal sensors to an interior surface of the tire.

14. The tire failure detector as recited in claim 12, wherein the thermal sensors are embedded between adjacent plies of the tire.

15. A tire failure detector, comprising:

at least one thermal receiver mounted in a housing having an elongate barrel defining a thermal communicating field for the thermal receiver which generates a signal representative of a thermal characteristic of a portion of a tire sensed by the receiver, the housing adapted for being attached to a portion of a motor vehicle;

a transparent cover disposed at a first end of the housing protecting the receiver from debris;

a supply of a pressurized fluid;

a nozzle mounted relative to the housing for spraying a stream of the pressurized fluid therein;

a tube connecting the supply of the pressurized fluid to the nozzle;

whereby the nozzle communicates the pressurized fluid for cleaning debris from the cover.

a processor for detecting an abnormal signal connected by a carrier to the receiver for communicating the signal therefrom; and

a display operated by the processor for presenting at least an image representative of the detected abnormal signal;

whereby an observer, detecting the display of an abnormal signal, attends to the condition causing the abnormal signal.

16. The tire failure detector as recited in claim 15, wherein the housing defines an outlet closed by a one-way valve for discharging debris and sprayed fluid from the housing.

17. The tire failure detector as recited in claim 15, wherein the receiver comprises an optical imaging device.

18. The tire failure detector as recited in claim 15, wherein the receiver comprises an infrared imaging device.

19. The tire failure detector as recited in claim 15, wherein the receiver comprises a thermal sensing device.

20. The tire failure detector as recited in claim 15, further comprising a second receiver and a third receiver mounted to the motor vehicle on facing opposing sides for generating signals representative of a thermal characteristic of a respective side wall portion of the tire.

21. The tire failure detector as recited in claim 15, wherein the portion of the motor vehicle comprises a shroud for being spaced-apart from the tire.

22. The tire failure detector as recited in claim 21, wherein the shroud is mounted to a biasing device for maintaining a predetermined gap between the housing and the tire subject of observation by the receiver.

23. The tire failure detector as recited in claim 15, further comprising:

a tire mounted to a wheel of the motor vehicle for being observed by the receiver;

a plurality of thermal sensors distributed in spaced-apart relation in the tire for changing in response to temperature changes in the tire;

whereby the receiver detects the changing thermal sensors for communicating a signal representative thereof to the processor.

24. The tire failure detector as recited in claim 23, wherein the thermal sensors include an adhesive surface for attaching the thermal sensors to an interior surface of the tire.

25. The tire failure detector as recited in claim 23, wherein the thermal sensors are embedded between adjacent plies of the tire.